

GOOGLE DATA ANALYTICS CAPSTONE PROJECT REPORT

Case Study: How Does a Bike-Share Navigate Speedy Success?

Thanh Nguyen for Google Data Analytics Capstone Project

Ask:

- Comparing the riding behavioral patterns of members and casual riders can reveal information that can be used to convert more casual riders into members.

Prepare:

- Source of data: <https://divvy-tripdata.s3.amazonaws.com/index.html>
- A total of 12 CSV files have been made available for each month starting from January 2021 to December 2021. Each file captures the details of every ride logged by the customers of Cyclistic.
- This data that has been made publicly available has been scrubbed to omit rider's personal information.

Process:

- The combined size of all the 12 CSV files is close to 950 MB. As a result, I choose R to clean and process data because R can handle big data files easily. Later, I will use Tableau for visualization because Tableau enables the establishment of clean and interactive dashboards.

Analyze, Share, and Act:

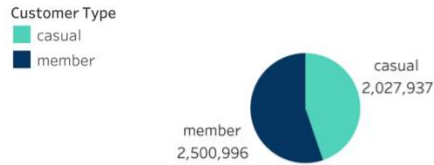
Identify areas to conduct analysis: (1) The different rideable types that casual and members use (2) The different ride durations between the two groups, and (3) The different timing usage between the two groups, such as months, weekdays, and hours

Share: Create interactive dashboard and write down reports and notebooks to share with stakeholders and communities.

CYCLISTIC ANALYSIS FOR THE YEAR 2021

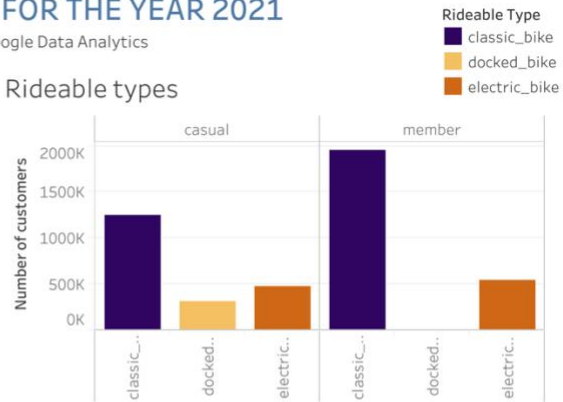
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Customer segments



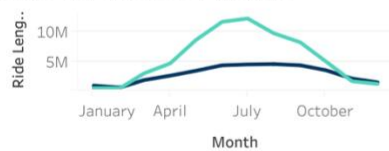
According to this graph, the total number of members who used Cyclistic bike services was only slightly more than 500,000 (25%) than the total number of casual users. Therefore, greater efforts are required to persuade more passive users to become members. In order to do this, we examine the disparity in usage between members and casual riders in terms of the types of bikes they ride and the amount of time they spend engaged in cycling activities.

Rideable types

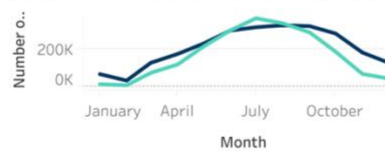


More than 250,000 (12.5%) of casual riders employed docked bikes, although no members reported utilising this feature. In contrast, the number of members on classic bicycles was approximately double that of casual users. When it comes to electric bikes, both groups had nearly the same number of users.

Ride duration per month



Number of customers per month

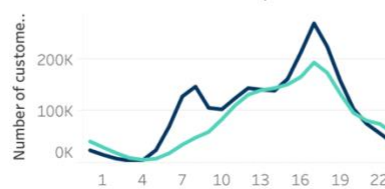


Looking at the Ride duration and Number of customers for each group per month, we can see that even though the total number of users was lower, casual riders spent significantly more time on each ride, with the highest levels reported during the summer months of June, July, and August. Meanwhile a consistent trend was observed within the member group. ..

Number of customers per weekday



Number of customers per hour



Over the week, membership remained stable. However, casuals showed the reverse tendency. Casual bikers outnumbered workday riders on weekends. The number of Cyclistic users peaked around 5:00-7:00 and 16:00-19:00, possibly the start and conclusion of working hours. Casual users increased about 7:00 and peaked around 18:00 before dropping. Casual cyclists may use Cyclistic for non-work activities.

Act:

(1) Conclusions: From above analyses, we can draw several important points for the casual riders group

- They used docked bikes considerably
- They often rode during weekends
- They used the bikes for a significant long period during summertime
- They might use the Cyclistic bikes for other purposes rather than office work

(2) Recommendations:

- Consider promotions if sign-up for memberships for docked bikes and weekend usage
- Consider other promotion and rewards systems to for new members during summer for long rides
- Consider discounted for members during non-busy hours to encourage more casual riders to sign up

(3) Additional data that could expand scope of analysis

- Demographic of users
- Employment sectors
- Purpose of usage